KY Dept. for Environmental Protection
Division for Air Quality

Kentucky's 2010 Regional Air Quality Conference on Climate Change/Livability/Air Quality

April 14, 2010

To Protect and Enhance Kentucky's Environment

Kentucky
UNBRIDLED SPIRIT

8-Hour Ozone

- On January 6, 2010, EPA proposed revisions to the National Ambient Air Quality Standards (NAAQS) for ground-level ozone.
- The proposed revisions are based on scientific evidence about ozone and its effects on people and sensitive trees and plants.
- The proposed revisions would affect two types of ozone standards:
  - ***Primary standard*** to protect public health, including the health of at-risk populations such as children, people with asthma, and older adults.
  - ***Secondary standard*** to protect public welfare and the environment, including sensitive vegetation and ecosystems.

8-Hour Ozone

- Specifically, EPA is:
  - Proposing to revise the level of the ***primary*** 8-hour ozone standard to a level within the range of 0.060-0.070 parts per million (ppm).
  - Proposing to establish a separate cumulative ***secondary*** standard within a range of 7-15 ppm-hours.
- EPA is also proposing to update the Air Quality Index (AQI) for ozone.
- EPA plans to issue final standards by August 31, 2010.
- For more information go to http://www.epa.gov/ozonepollution

8-Hour Ozone

Expected Schedule

- Proposal signed on January 6, 2010.
- Public comment period for 60 days after proposal is published in Federal Register.
- Public hearings
  - –February 2, 2010 –Arlington, Va., and Houston, Texas.
  - –February 4, 2010 –Sacramento, Calif.
- Final Rule signed by August 31, 2010.
- Final Designations in August 2011.
- State Implementation Plans (SIPs) due December 2013.

8-Hour Ozone Secondary Standard

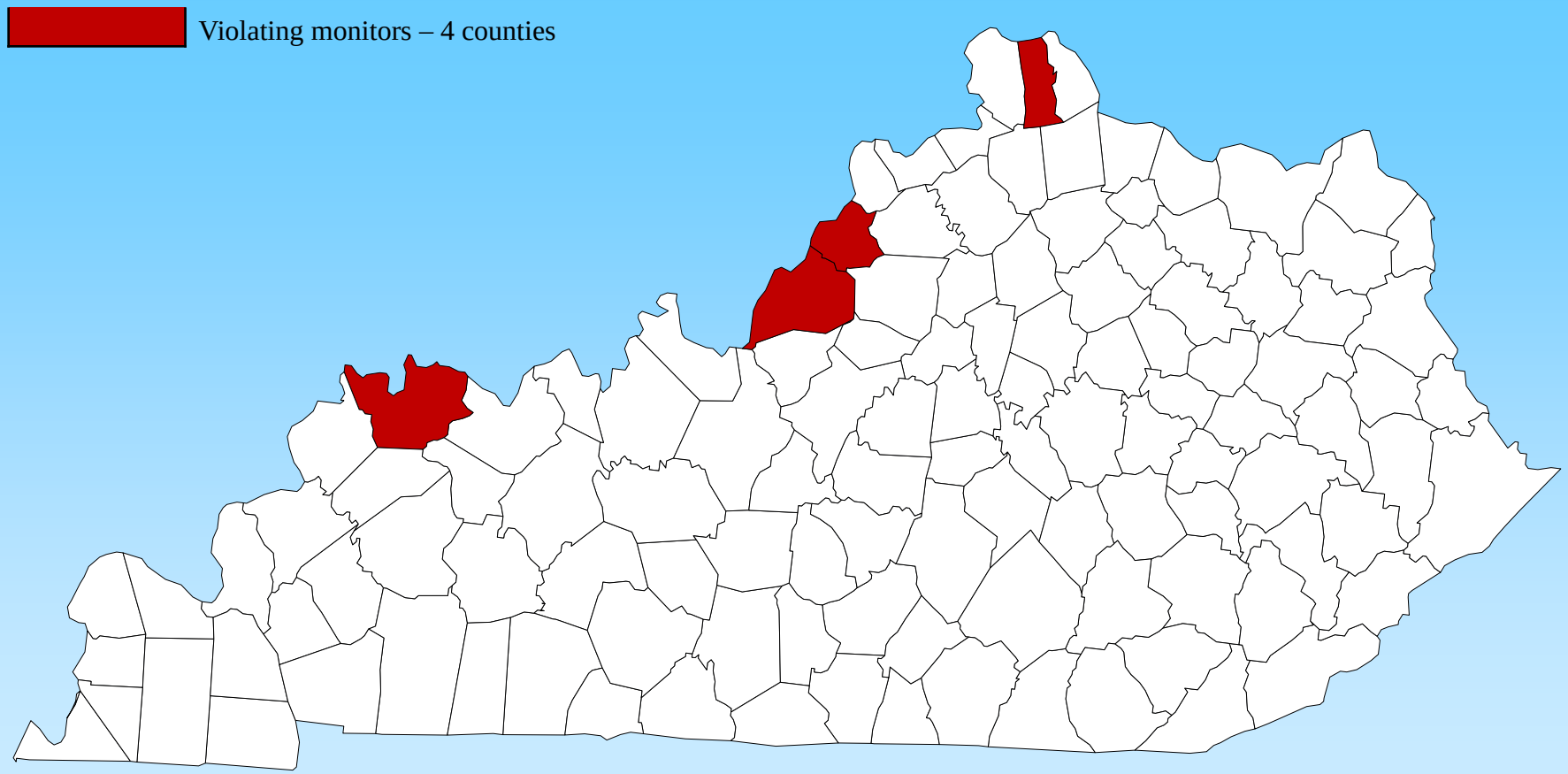
- EPA is proposing to establish a distinct cumulative, seasonal secondary standard at a level in the range of 7-15 ppm-hours.
- This cumulative standard would add weighted hourly ozone concentrations across all days in a three-month period.
- The Administrator proposes that a seasonal secondary standard identical to the primary standard, as was set in 2008, is inadequate to provide the requisite level of protection for vegetation and ecosystems.
- The new secondary standard, also called W126, is designed to account for the cumulative effects of repeated ozone exposures on sensitive vegetation during the three months of the year when ozone concentrations are highest.

2008 8-Hour Ozone

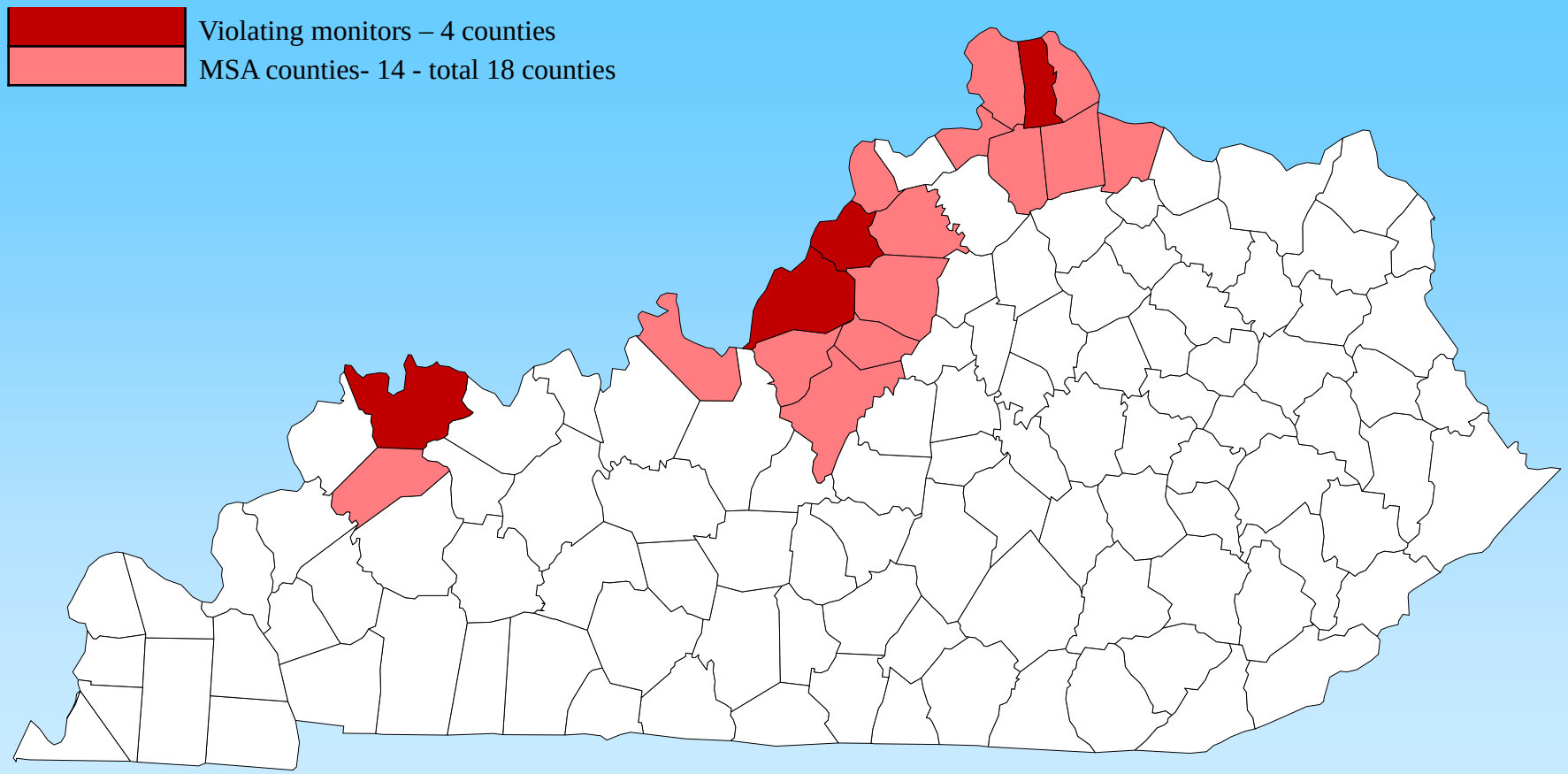
Steps in calculating W126 value for a particular site:

- Measure hourly ozone (O3) concentrations for each hour within the 12 hour daylight period (8am-8pm).
- Assign a weight to each hourly value based on concentration: lower concentrations receive less weight than higher concentrations.
- Sum the 12 weighted hourly values to calculate a daily W126 value.
- Repeat steps 1-3 for each day within the ozone season and then sum the daily values to calculate the monthly W126 value.
- Identify the consecutive 3-month period whose monthly W126 values produce the highest total. This total becomes the seasonal W126 for this site.
- Average three years of maximum W126 values and compare to standard.

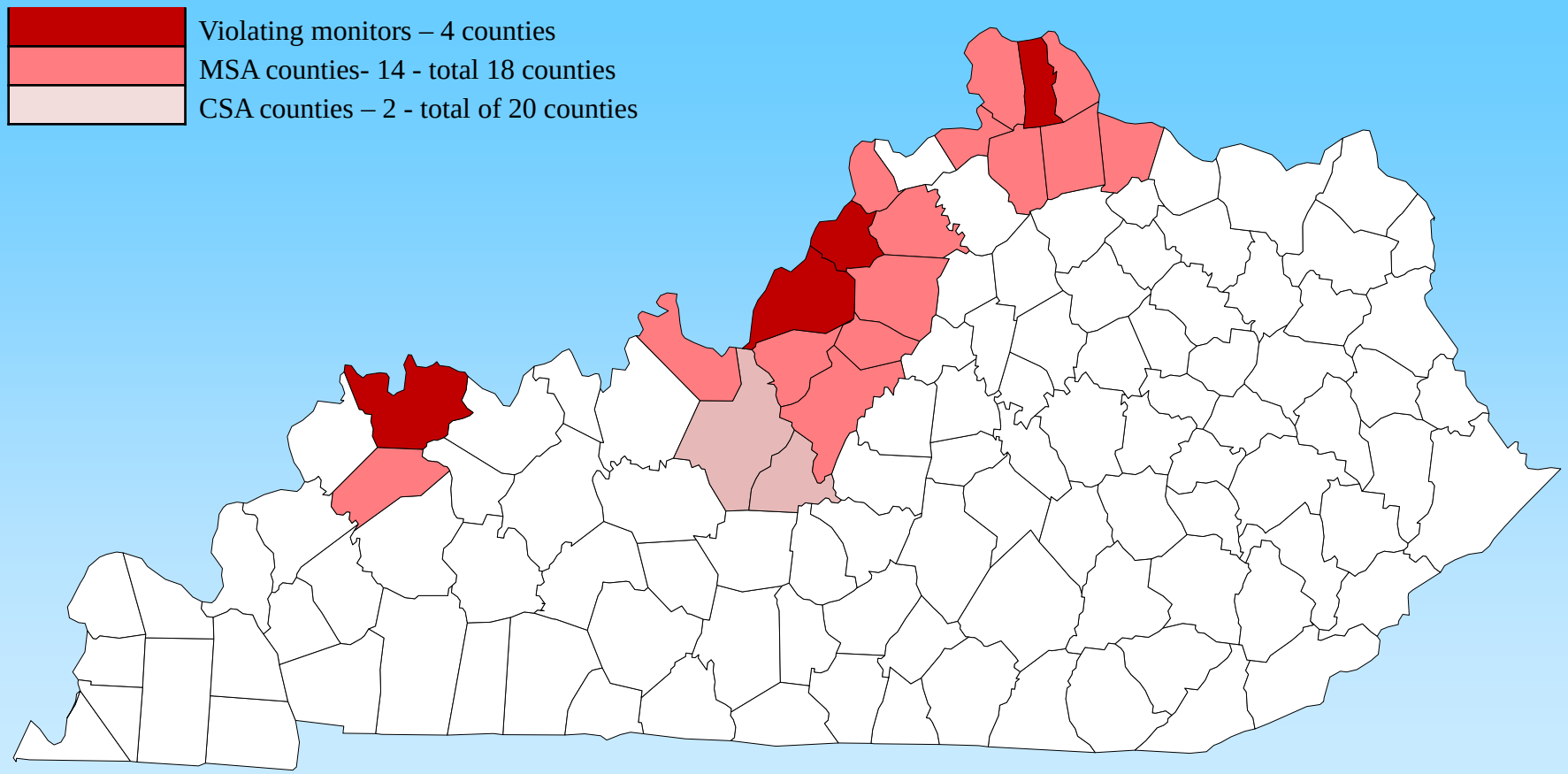
Monitors in violation of 0.075 8-Hour Ozone Counties Only



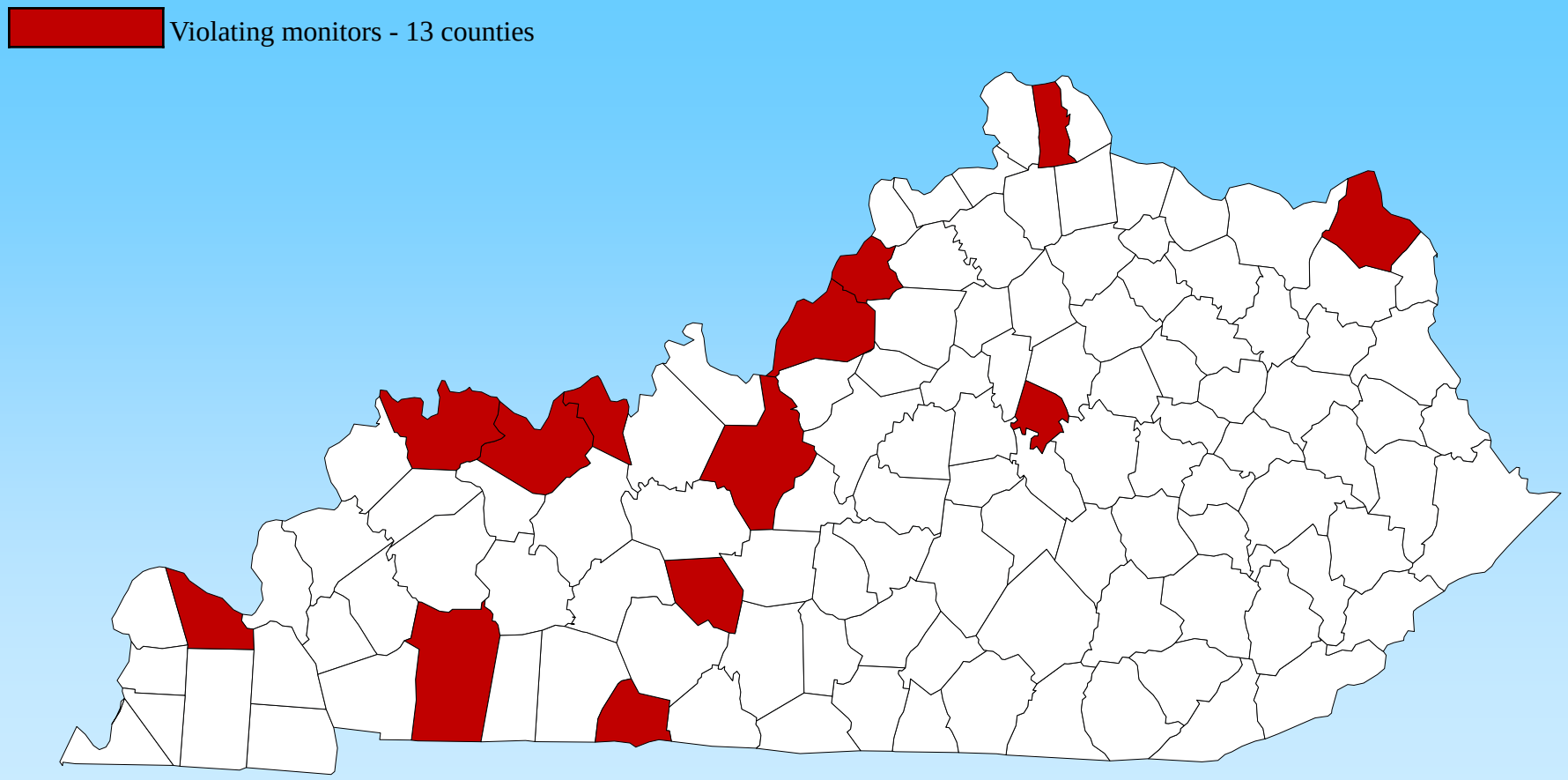
Monitors in violation of 0.075 8-Hour Ozone (MSA)



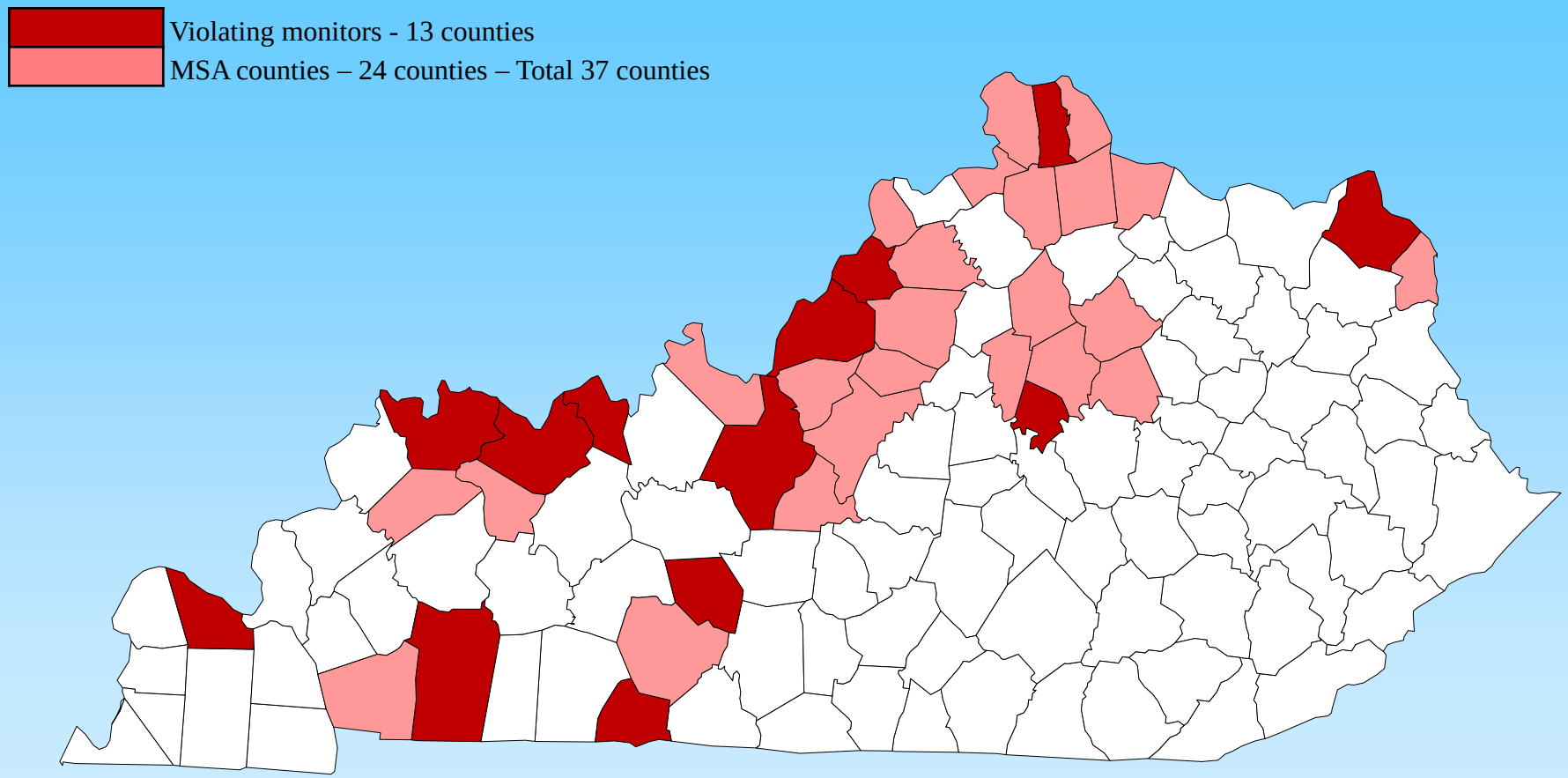
Monitors in violation of 0.075 8-Hour Ozone (CSA)



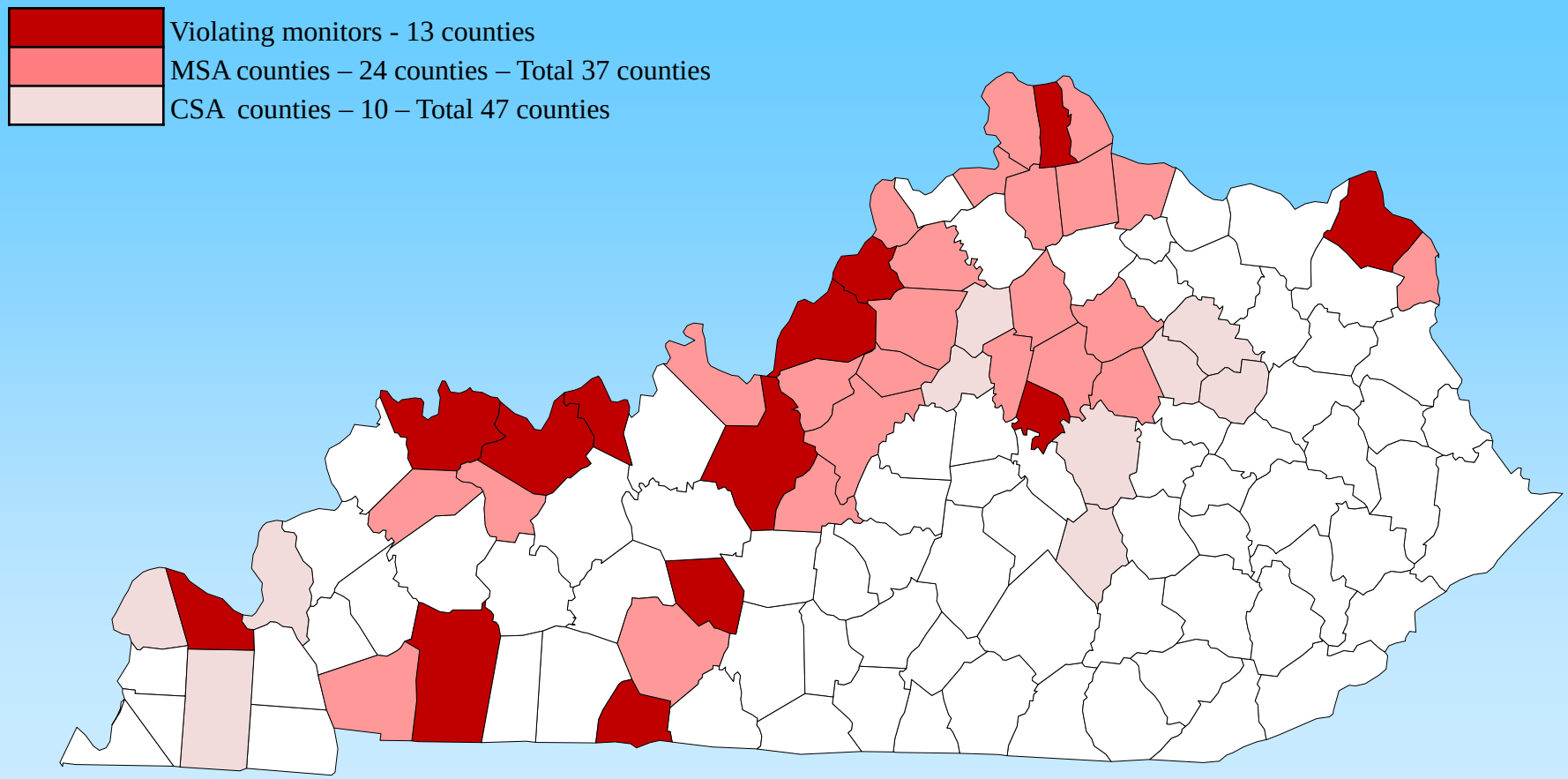
Monitors in violation of 0.070 8-Hour Ozone Counties Only



Monitors in violation of 0.070 8-Hour Ozone (MSA)

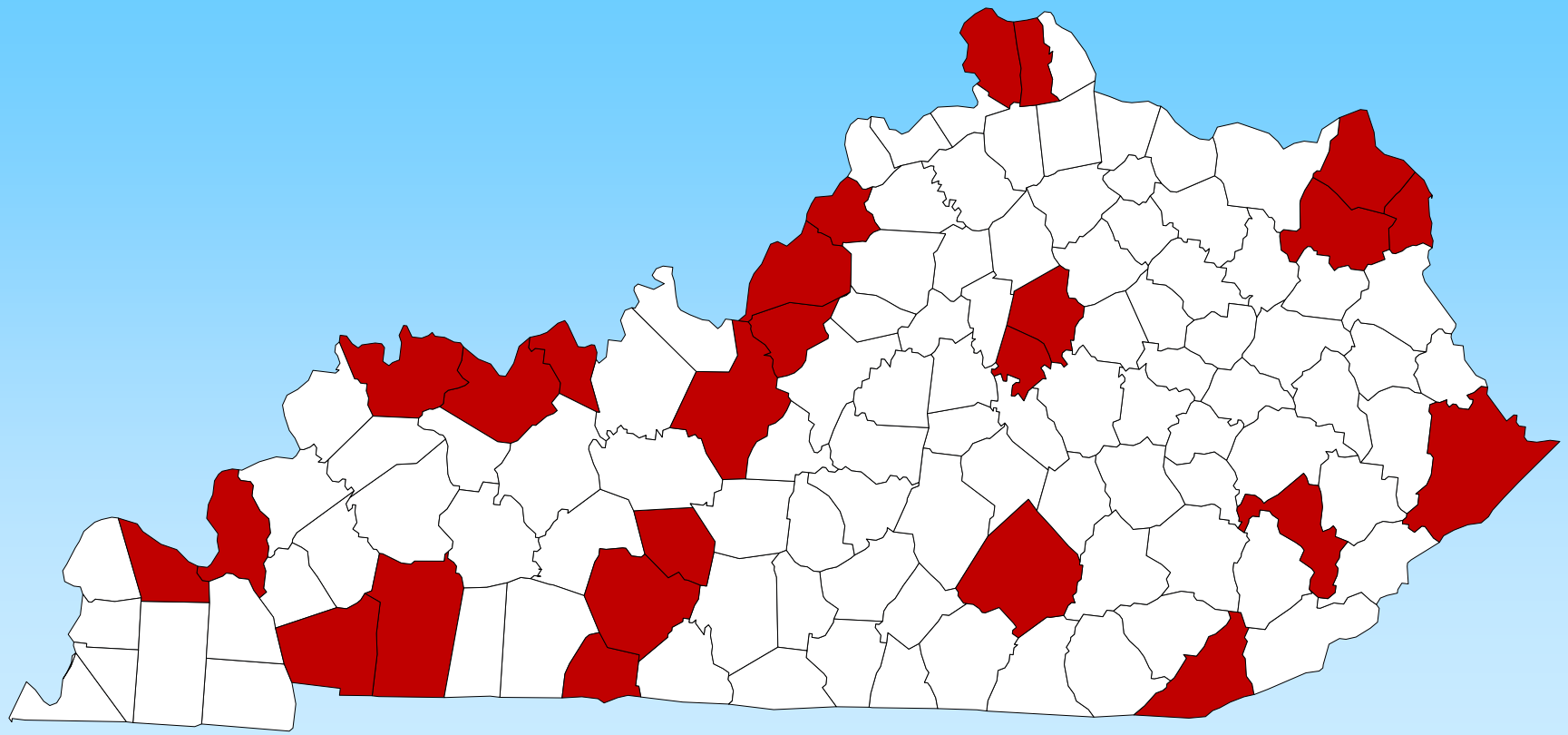


Monitors in violation of 0.070 8-Hour Ozone (CSA)



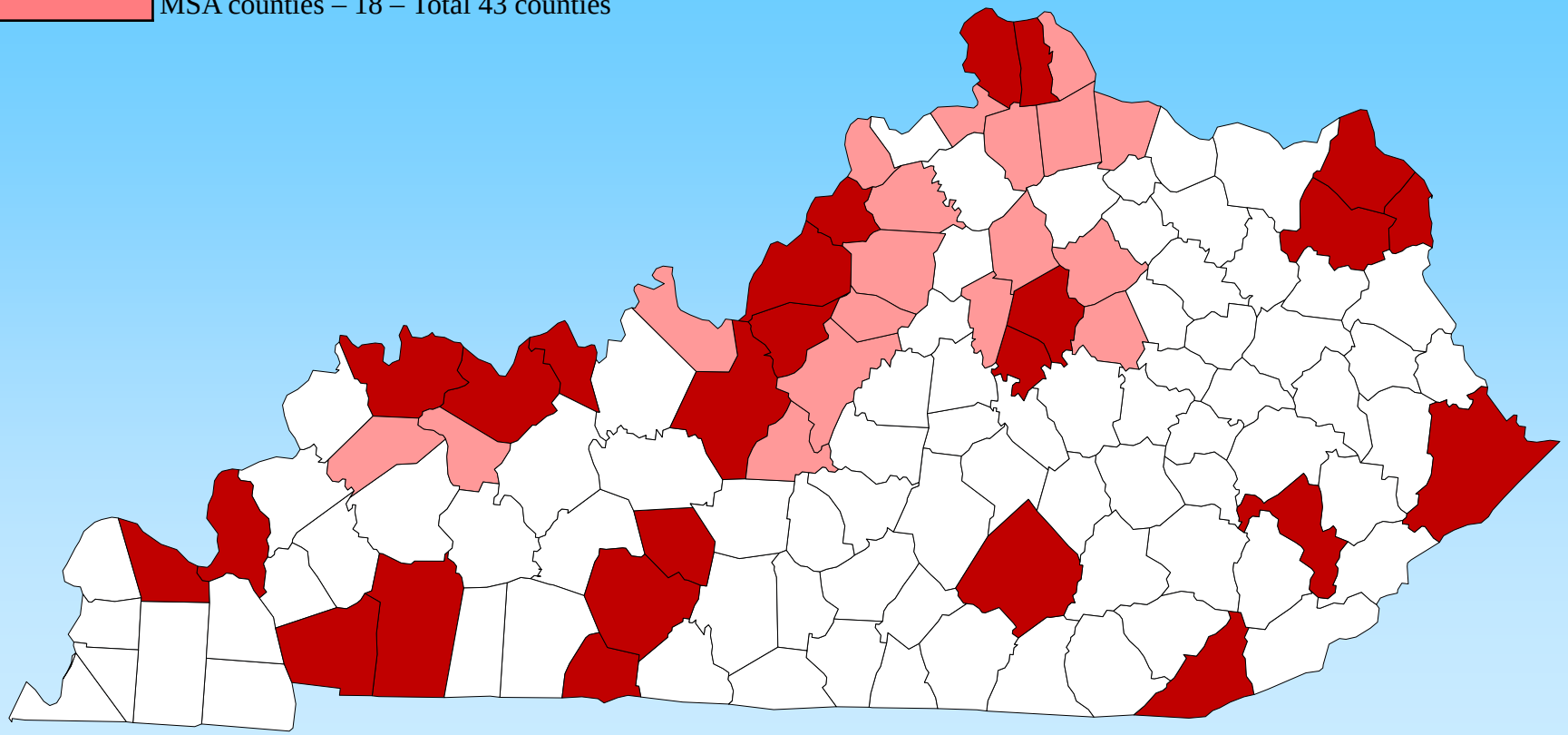
Monitors in violation of 0.065 8-Hour Ozone Counties Only

Violating monitors – 25 counties



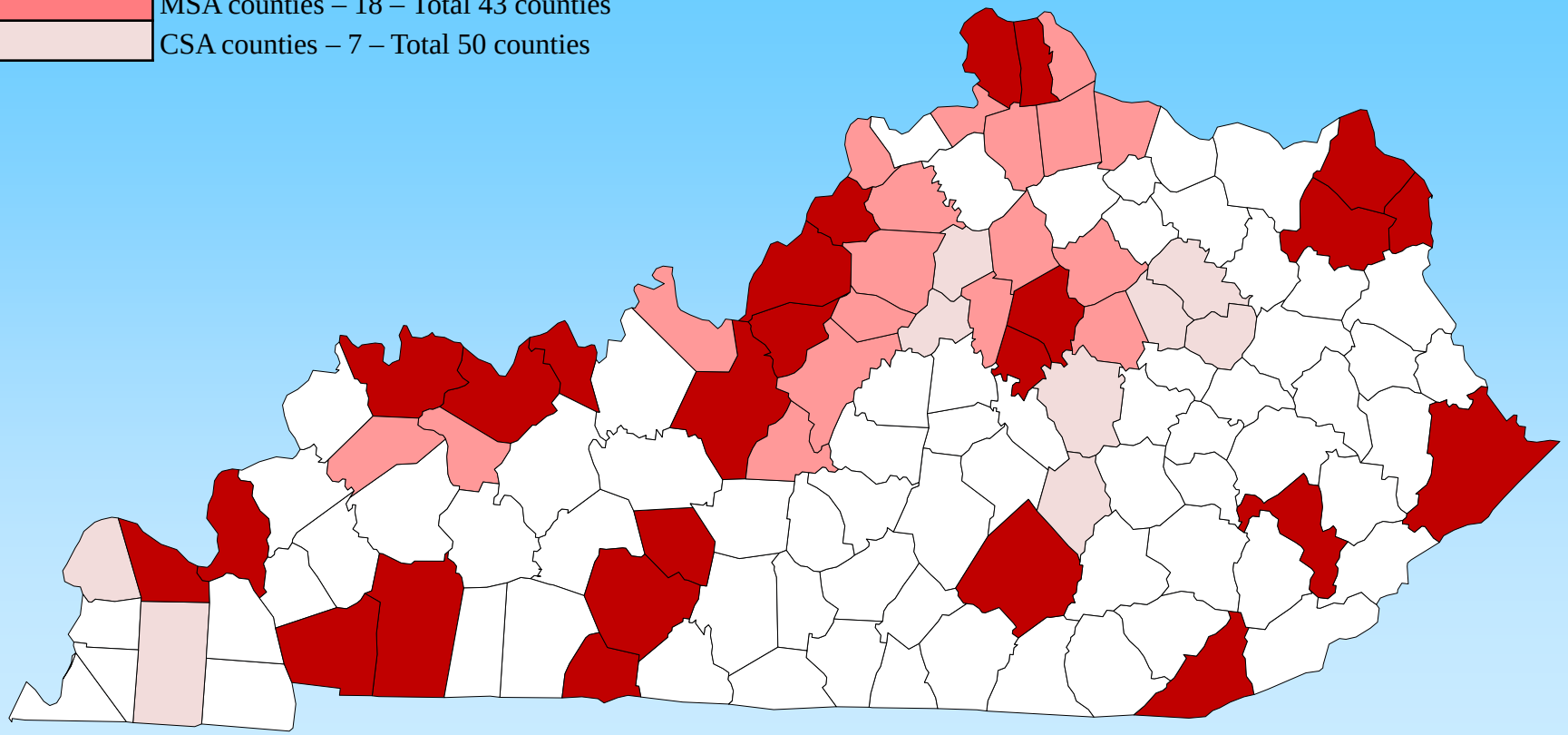
Monitors in violation of 0.065 8-Hour Ozone (MSA)

Violating monitors – 25 counties
MSA counties – 18 – Total 43 counties



Monitors in violation of 0.065 8-Hour Ozone (CSA)

Violating monitors – 25 counties
MSA counties – 18 – Total 43 counties
CSA counties – 7 – Total 50 counties



8-Hour Ozone KYDAQ Comments

Proposed Decision on the Level of the Primary Standard

- Recognize that the proposed level is recommended to provide requisite protections of public health and welfare.
- Due to the lack of sufficient analysis to determine background levels for specific areas of the country and transportation of ozone, the division is in support of the upper ranges of 0.070 ppm for the primary standard.
- The division concurs with the EPA that neither the EPA nor States have experience in implementing this type of secondary ozone standard. Therefore, the division requests that the EPA promulgate a secondary standard identical to the primary standard.

8-Hour Ozone KYDAQ Comments

Proposed Implementation Schedule

- The division recognizes that acceleration of designations for the primary standard would help limit any delays in health protections associated with the reconsideration of the standards, however this schedule designates areas in the middle of an ozone season.
- Designating areas in the middle of the ozone season could include areas for non-attainment status that at the end of that ozone season would have met the standard.
- The CAA allows up to two years to designate after promulgation or revision of a standard. Allowing states the full amount of time allowed under the CAA would enable them to utilize the most recent monitoring data and may allow states to minimize the number of areas designated non-attainment.

8-Hour Ozone KYDAQ Comments

Proposed Implementation Schedule continued

- The proposed standards are close to the levels indicated in rural, undeveloped areas.
- Adequate time must be given for the EPA to develop guidance for rural non-attainment areas where there are no sources to implement control measures.
- In order to meet this more stringent standard, states must rely upon the development of national regulations to reduce emissions of mobile sources and interstate transport from stationary sources.

8-Hour Ozone KYDAQ Comments

Proposed Implementation Schedule continued

- The Division encourages EPA to provide an implementation rule at the same time any NAAQS is proposed.
- The Division is concerned that implementation guidance on the primary and secondary standards would not be provided in time to support an accelerated schedule.

NO_2

- On January 22, 2010, EPA strengthened the health-based National Ambient Air Quality Standard (NAAQS) for nitrogen dioxide (NO_2).
- Became effective April 12, 2010.
- EPA is setting a new 1-hour NO_2 standard at the level of 100 parts per billion (ppb).
- The form for the 1-hour NO_2 standard, is the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations.
- EPA also is retaining, with no change, the current annual average NO2 standard of 53 ppb.
- EPA expects to designate areas as attaining or not attaining the new standard by January 2012.

Revising the network for NO_2

- EPA is setting new requirements for the placement of new NO2 monitors in urban areas.
- These include:
- **Near Road Monitoring**
  - At least one monitor must be located near a major road in any urban area with a population greater than or equal to 500,000 people.
  - A second monitor is required near another major road in areas with either:

    (1) population greater than or equal to 2.5 million people, or

    (2) one or more road segment with an annual average daily traffic (AADT) count greater than or equal to 250,000 vehicles.

Revising the network for NO_2

Community Wide Monitoring

- A minimum of one monitor must be placed in any urban area with a population greater than or equal to 1 million people to assess community-wide concentrations.
- An additional 53 monitoring sites will be required to assess community-wide levels in urban areas.
- Some NO_2 monitors already in operation may meet the community-wide monitor siting requirements.

Revising the network for NO_2

Monitoring to Protect Susceptible and Vulnerable Populations

- Working with the states, EPA Regional Administrators will site at least 40 additional NO_2 monitors to help protect communities that are susceptible and vulnerable to NO_2 - related health effects.
- All new NO_2 monitors must begin operating no later than January 1, 2013.
- The Regional Administrators also have the authority to require additional near-road monitoring in urban areas where multiple peak concentration areas may be caused by a variety of mobile source factors including fleet mix, traffic congestion patterns, or terrain.

SO_2

- On November 16, 2009 the Environmental Protection Agency (EPA) proposed to revise the National Ambient Air Quality Standard for sulfur dioxide (SO_2).
- EPA is proposing to revise the primary SO_2 standard to a level of between 50 and 100 parts per billion (ppb) measured over 1 hour.
- The existing primary standards were 140 ppb measured over 24-hours, and 30 ppb measured over an entire year.

Lead

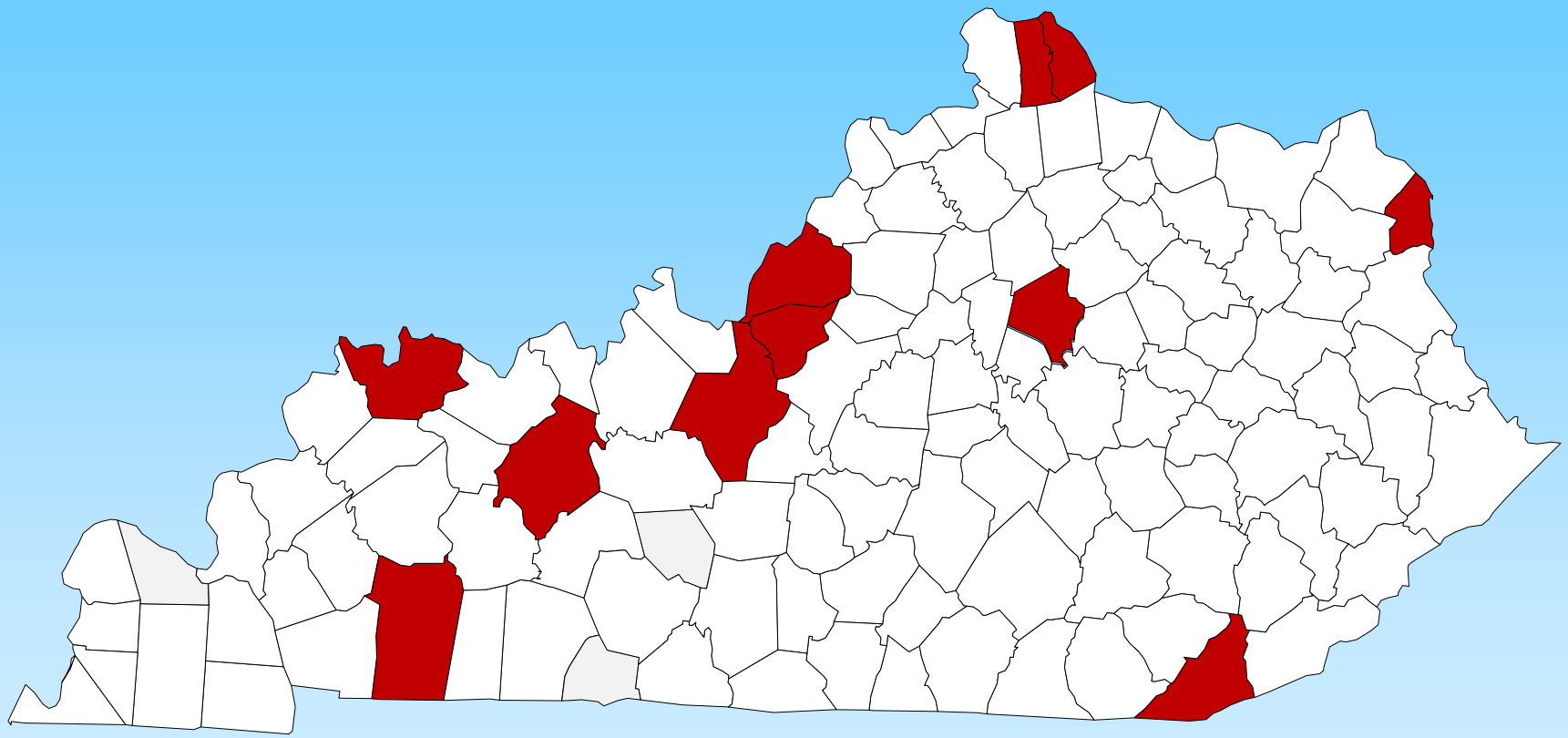
- On December 23, 2009 the Environmental Protection Agency (EPA) proposed to revise the ambient monitoring requirements for measuring airborne lead.
- EPA is proposing to change the lead emissions monitoring threshold to 0.50 tons per year (tpy). Air quality monitoring agencies would use this threshold to determine if an air quality monitor is required to be placed near a facility emitting lead. EPA also is requesting comments on alternative emission thresholds. The current emissions threshold is 1.0 tpy.

EPA Draft Policy Assessment of the PM $_{2.5}$ Standard

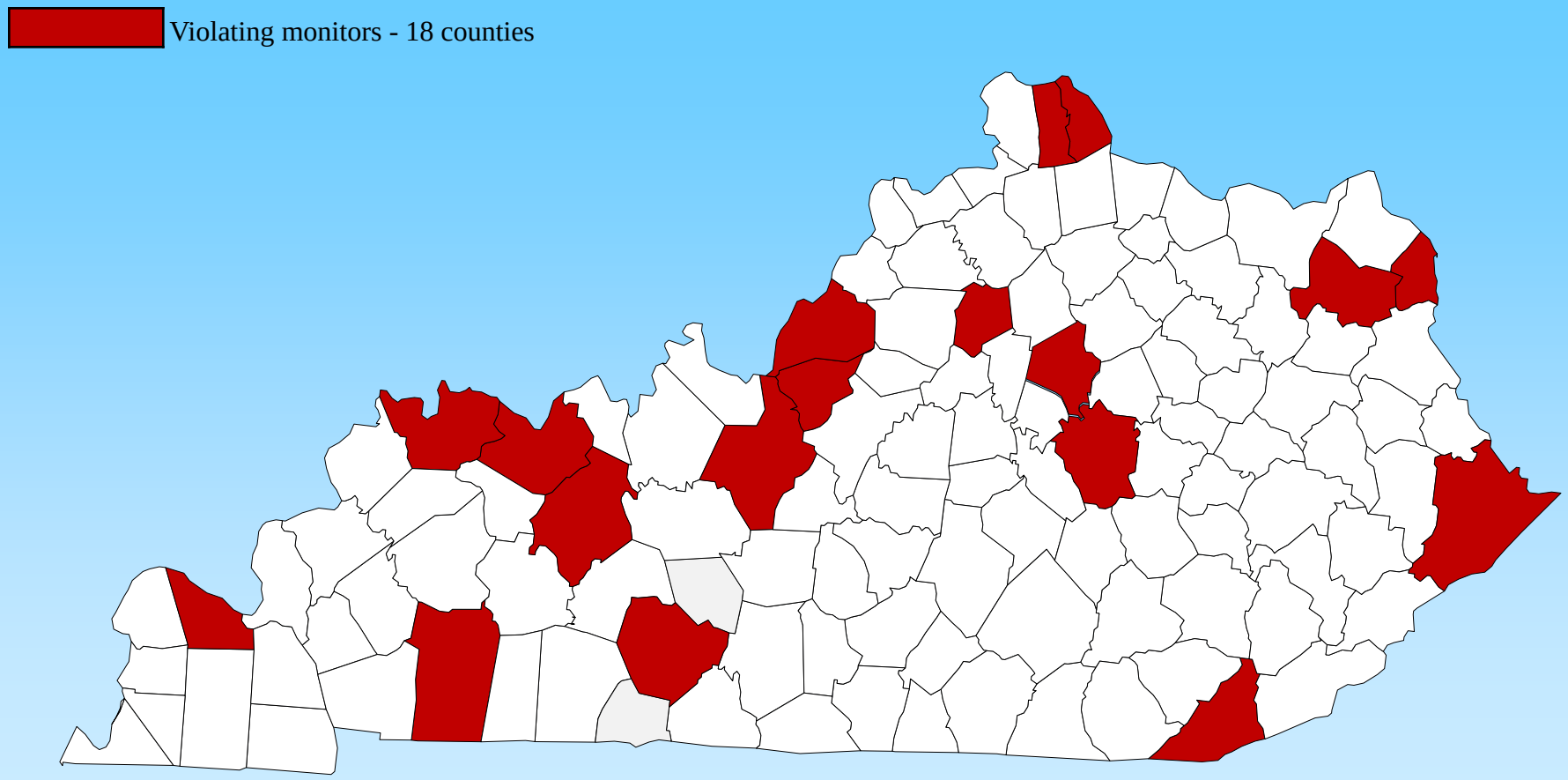
- EPA released its draft policy assessment in the review of the particulate matter (PM) NAAQS.
- EPA says that its preliminary conclusion is that the "available information clearly calls into question the adequacy of the current suite of PM2.5 standards.
- The alternative suites suggested are as follows:
  - A revised PM2.5 annual standard within the range of 13 to 12 micrograms per cubic meter (μ g/m3), together with retaining or revising the 24-hour standard within the range of 35 to 30 μ g/m3.
  - Or revising the annual standard within the range of 11 to 10 μ g/m3, together with revising the 24-hour standard within the range of 30 to 25 μ g/m3.

Monitors in violation of 12-13 µg/m3

Violating monitors - 11 counties

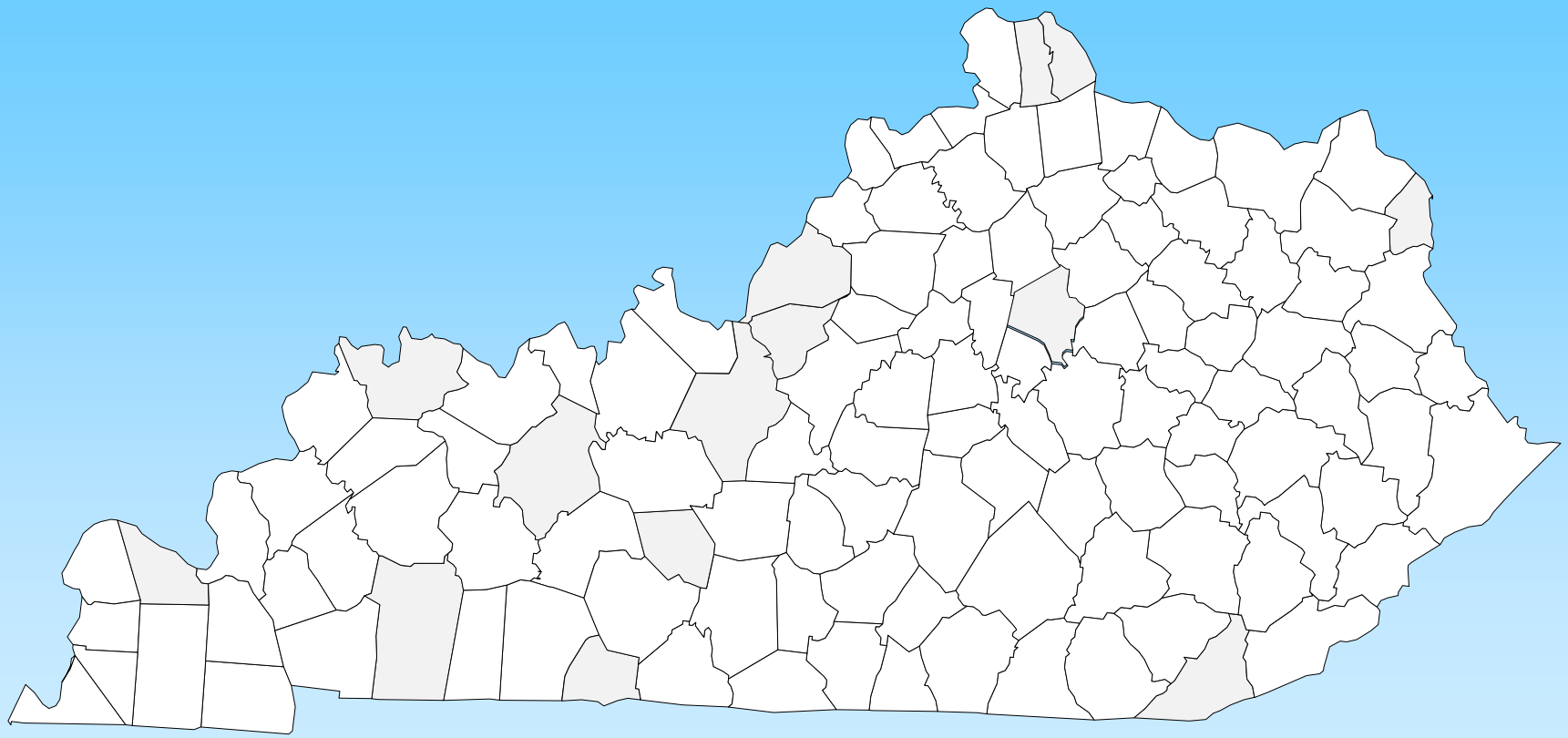


Monitors in violation of 10 µg/m3

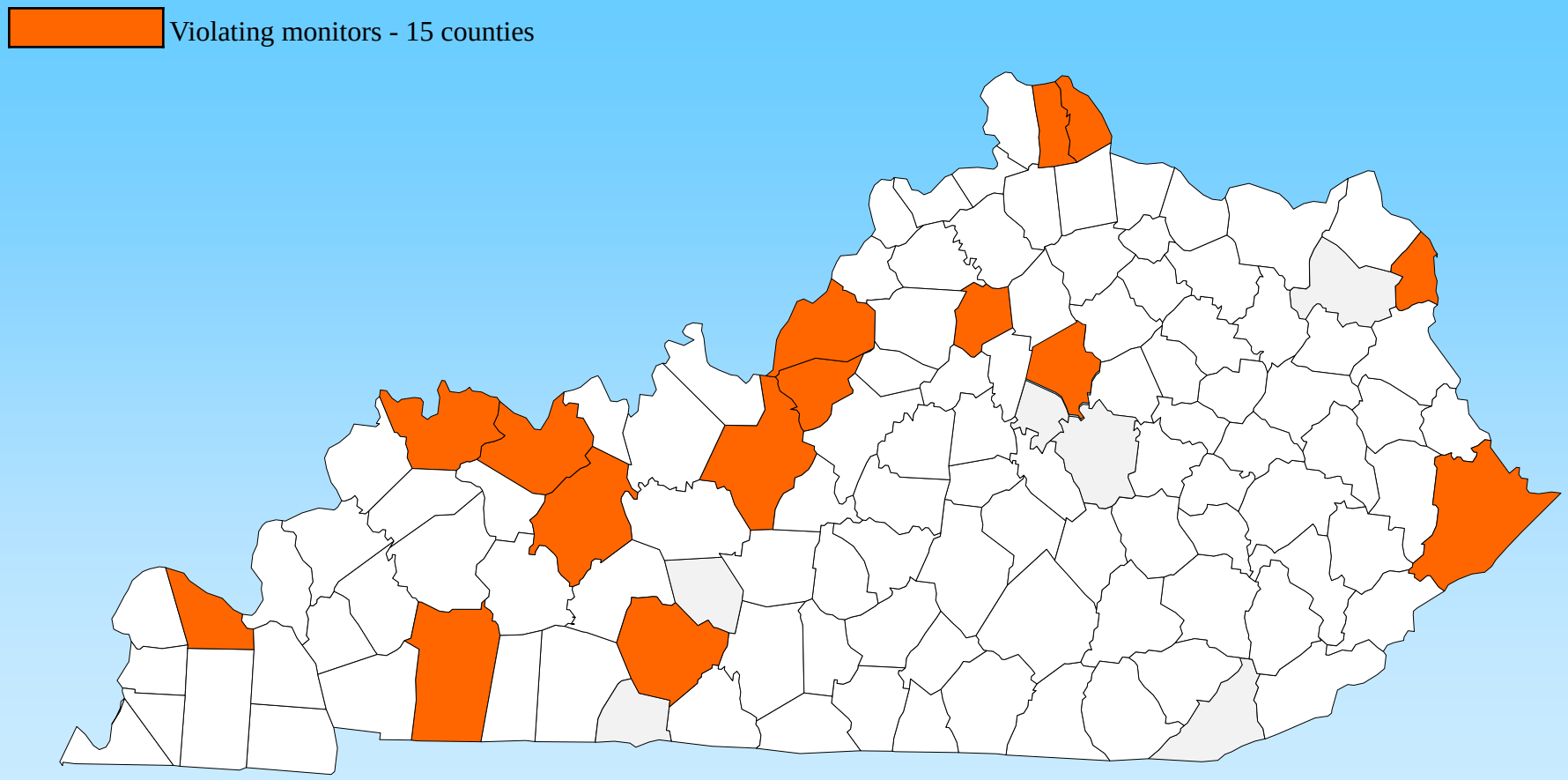


Monitors in violation of Daily 30-35 µg/m3

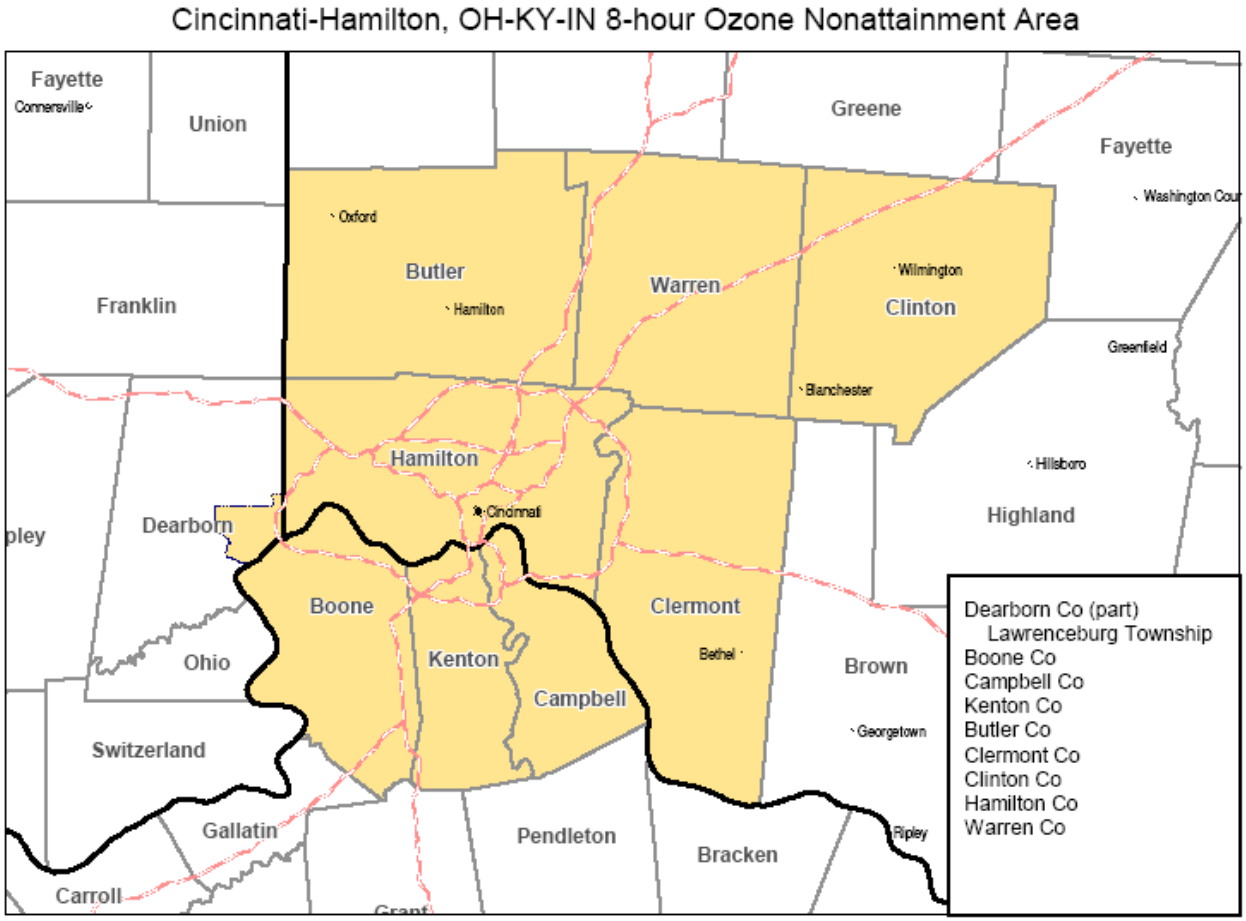
Violating monitors - 0 counties



Monitors in violation of Daily 25-30 µg/m3



Cincinnati-Middletown OH-KY-IN 1997 8-hour ozone nonattainment area



Boundaries and locations are for illustrative purposes only. This is not a regulatory document.

Ozone Redesignation Request

- On January 28, 2010, the Division for Air Quality submitted a final request to redesignate the Kentucky portion of the Cincinnati-Middletown OH-KY-IN area to attainment for the 1997 8-hour ozone standard.
- Waiting for approval and publication in the Federal Register.

Questions?

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